

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 0
- 1

2

3

4

5

7

8
9

10

12
13

15

16

17

18
19
20
21

1 scheduling; gas accounting; and state and federal regulatory issues related to
2 supply, capacity, and asset management. With regard to uranium procurement,
3 these responsibilities include procurement of natural uranium and conversion
4 services.

5
6 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
7 **WORK EXPERIENCE.**

8 A. I graduated from the University of South Carolina in 1988 with a Bachelor
9 of Science degree in Accounting. Following graduation, I worked for
10 approximately three (3) years as an accountant for a national security services
11 firm. In 1992, I began my employment with SCANA as an accountant. Over the
12 years, I have held varying positions of increasing responsibility related to gas
13 procurement, interstate pipeline and local distribution company scheduling, and
14 preparation of gas accounting information. In May 2002, I became Manager of
15 Operations and Gas Accounting with SCANA Services where I was responsible
16 for gas scheduling on interstate pipelines and gas accounting for all SCANA
17 subsidiaries. In November 2003, I became Fuels Planning Manager where I
18 assisted all SCANA subsidiaries with strategic planning and special projects
19 associated with natural gas. I held this position until promoted to my current
20 position in December 2005.

1 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY REGULATORY**
2 **COMMISSION?**

3 A. Yes, I have testified before this Commission on several occasions. I have
4 also testified before the Georgia Public Service Commission and the North
5 Carolina Utilities Commission.
6

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
8 **PROCEEDING?**

9 A. The purpose of my direct testimony is to provide information about the
10 natural gas and nuclear fuel purchasing process for SCE&G generation and to
11 discuss natural gas and uranium prices for the review period of January 1, 2010
12 through December 31, 2010 (“Review Period”) and the near term outlook.
13

14 **I. NATURAL GAS PURCHASING**

15 **Q. PLEASE DESCRIBE HOW YOUR DEPARTMENT MAKES NATURAL**
16 **GAS PURCHASING DECISIONS.**

17 A. The gas purchases made by the Natural Gas and Uranium Procurement
18 Department (“Department”) are driven by the needs of the electric generation
19 group. We supply SCE&G’s Economic Resource Commitment Group (“ERC”)
20 with current market information that they use in resource commitment modeling
21 for our electric generation plants. The ERC requests gas price quotes and market

1 information from the Department on a continual basis. The ERC uses current gas
2 prices as one input into its dispatch modeling to determine the most economical
3 means of reliably meeting the electricity needs of our customers.

4 The actual gas purchasing decisions are driven by the unit commitment
5 decisions made by the ERC. Once ERC decides that natural gas is the economical
6 choice for providing reliable power to our customers, our Department is directed
7 to purchase gas supplies for delivery with a stated term and volume at the best
8 available current market prices.

9
10 **Q. ARE YOUR CONTRACTS TO PURCHASE GAS NORMALLY SHORT-**
11 **TERM OR LONG-TERM?**

12 A. We have standing industry standard contracts with a group of suppliers that
13 set forth many of the terms and conditions of delivery. Price and quantity,
14 however, are determined at the time of purchase because the purchase of gas
15 supplies for electric generation is generally made within hours of the need to burn
16 the gas to generate electricity. The purchase is a short-term transaction that is
17 completed using current market pricing for natural gas in the market.

18 The most common prices quoted for daily gas deliveries are the day-ahead
19 gas price. The Gas Daily Average or GDA, for example, is an average of these
20 day-ahead prices, reported on a historical basis the next business day.

1 The day ahead gas market, however, closes at mid-day of the day before the
2 gas is delivered. Because some unit commitment decisions may not be made until
3 the following morning, GDA prices are not available for all supply purchases for
4 electric generation. In these situations, the gas we purchase for electric generation
5 is made in the intraday market.

6
7 **Q. WHAT TOOLS DO YOU USE TO INFORM YOUR NATURAL GAS**
8 **PURCHASING DECISIONS?**

9 A. The most important tools used to inform our purchasing decisions are the
10 Department's collective experience in national natural gas markets, careful
11 observation and evaluation of movements in market-based prices, and continual
12 surveys of our suppliers for pricing information. These tools are by far the most
13 important and most accurate in helping us determine market-based prices for
14 natural gas supplies being purchased on the "spot market."

15 Another tool we use to inform our purchasing decisions is the
16 Intercontinental Exchange ("ICE"), which is a real time electronic trading board.
17 The shortcoming of the ICE service as with other pricing services is that not all
18 trades are reflected in these services. Nevertheless, ICE is one of the most widely
19 used sources of pricing information and provides a reliable indication of current
20 market prices.

1 **Q. DOES NEW YORK MERCHANTILE EXCHANGE (“NYMEX”) PRICING**
2 **INFLUENCE THE NATURAL GAS BENCHMARK PRICE FOR EITHER**
3 **THE URQUHART COMBINED CYCLE UNITS OR THE JASPER**
4 **FACILITY?**

5 A. NYMEX is a financial market which captures real-time trading data and
6 information about the projected price of natural gas and other commodities at
7 various times in the future. Therefore, we use NYMEX pricing data infrequently
8 for calculating a benchmark price relative to gas supply for either Urquhart or
9 Jasper. Since these units are intermediate turbines, the ERC decides whether to
10 operate these facilities based upon the daily demands of SCE&G’s customers and
11 its system. Consequently, most of the gas purchasing decisions for these plants
12 are short-term, that is, for a day at a time or across a weekend or holiday period.

13
14 **Q. WHAT NATURAL GAS TRANSPORTATION CAPACITY DOES SCE&G**
15 **HAVE FOR THE URQUHART COMBINED CYCLE UNITS AND THE**
16 **JASPER FACILITY?**

17 A. SCE&G has a long-term capacity contract with Southern Natural Gas
18 Company for firm transportation service of 51,050 dekatherms per day to serve
19 Urquhart. The Department, as requested by the ERC, procures the natural gas
20 needed to supply Urquhart. We have in excess of 50 different suppliers that we

1 survey at various times to secure our gas supplies at market-based rates and from
2 entities that have proven to be creditworthy and reliable.

3 For Jasper, SCE&G has contracted with SCANA Energy Marketing, Inc.
4 (“SEMI”) for firm gas capacity of 120,000 dekatherms per day. Under this
5 Commission-approved contract, SEMI provides gas supply when needed.
6

7 **Q. PLEASE DESCRIBE THE MOVEMENT OF NATURAL GAS PRICES**
8 **DURING THE CURRENT PERIOD UNDER REVIEW.**

9 A. As depicted in Exhibit No. ____ (RMJ-1) attached hereto, the end of 2009
10 saw prices in the \$6.00 range as a colder than normal start to the winter boosted
11 demand. On the third trading day for 2010, natural gas prices hit their high for the
12 year at \$6.11. Prices fell slowly during the first quarter of 2010 even in the face of
13 cold weather as the national storage surplus and sluggish economy weighed down
14 prices, reaching \$3.81 at the beginning of April. The second quarter saw prices
15 rally on a mixture of generation demand and predictions for an active hurricane
16 season in the Gulf, topping out for the summer at \$5.19 on June 15. In the fall, a
17 combination of mild temperatures, little hurricane activity and burgeoning national
18 storage levels resulted in prices falling, reaching the low for the year on October
19 27, at \$3.21. The below normal temperatures in December fueled a rally to the
20 \$4.40-\$4.60 area, where prices ended the year.

1 The near term forecast indicates natural gas prices are likely to remain
2 fairly flat due to the short term outlook for balanced supply and demand.
3 However, short term price volatility can result from dramatic changes in either
4 supply or demand components. The fundamental factors of such changes may
5 include, but are not limited to, weather, increases in consumption associated with
6 an economic recovery, increases in supplies from shale production, changes in
7 storage inventory levels, and/or constraints in pipeline capacity.

8 9 **II. NUCLEAR FUEL PURCHASING**

10 **Q. PLEASE DESCRIBE THE NUCLEAR FUEL CYCLE.**

11 A. Uranium ore is the source of fuel used to generate electricity in nuclear
12 reactors. Naturally occurring uranium primarily consists of two isotopes, 0.7%
13 Uranium-235 and 99.3% Uranium-238. As depicted in Exhibit No.____ (RMJ-2)
14 attached hereto, uranium must undergo a series of processes to produce a useable
15 fuel before it can be used in a reactor for electricity generation. These processes
16 are mining and milling, conversion, enrichment, and fabrication. In the first stage,
17 uranium is mined. Once the ore is mined it is sent to a mill where it is crushed
18 into smaller pieces and then introduced to a slurry in which a strong mixed
19 solution is used to dissolve the uranium. At this point in the mining and milling
20 process, the uranium is then dried and commonly referred to as yellowcake, also
21 known as uranium oxide (“U₃O₈”) concentrate. In the next step of the process,

1 known as conversion, the U_3O_8 goes through a chemical process in which it is
2 converted into uranium hexafluoride (“ UF_6 ”). The UF_6 then becomes the
3 feedstock required in the isotopic separation process, known as enrichment. Once
4 the UF_6 is enriched to the desired level, it is converted to uranium dioxide (“ UO_2 ”)
5 powder and formed into pellets. This process, and the subsequent steps of
6 inserting the fuel pellets into fuel rods and bundling the rods into fuel assemblies
7 for use in nuclear reactors, is referred to as fabrication.

8
9 **Q. PLEASE DESCRIBE HOW YOUR DEPARTMENT MAKES**
10 **PURCHASING DECISIONS FOR NUCLEAR FUEL.**

11 A. The responsibilities related to nuclear fuel procurement are shared between
12 the Department and the Nuclear Design and Analysis department (“NDA”). NDA
13 prepares a forecasted refueling schedule which is reviewed by the Department on
14 an annual basis. This forecast forms the foundation for the nuclear fuel
15 requirements forecast. Once the nuclear fuel requirements forecast is developed,
16 the Department is primarily responsible for procuring U_3O_8 and conversion
17 services and NDA is primarily responsible for procuring enrichment and
18 fabrication services. Collectively, the Department and NDA form the Nuclear Fuel
19 Procurement team (“Team”). The Team determines nuclear fuel requirements,
20 shares market information and reviews offers related to all segments of the nuclear
21 fuel cycle.

1
2 **Q. ARE YOUR CONTRACTS TO PURCHASE NUCLEAR FUEL**
3 **NORMALLY SHORT-TERM OR LONG-TERM?**

4 A. Due to the long lead time required to process uranium prior to being loaded
5 in SCE&G's reactor, our contracts are normally long-term contracts. Currently
6 the Company has long term commitments for uranium and conversion services,
7 enrichment and fabrication for V.C. Summer Unit One. The Team monitors the
8 nuclear fuel market on an ongoing basis and evaluates spot market opportunities
9 from time to time that may supplement long term contract supplies as appropriate.
10 Included in the procurement process is the Company's contingency reserve. The
11 nuclear fuel contingency reserve targets are designed to provide security of supply
12 for future requirements by mitigating potential market disruptions.

13
14 **Q. PLEASE DESCRIBE THE MOVEMENT OF NUCLEAR FUEL PRICES**
15 **DURING THE CURRENT PERIOD UNDER REVIEW.**

16 A. The nuclear fuels market is comprised of two types of pricing scenarios:
17 spot and long term. Spot prices typically represent any transaction taking place
18 within a year while long term prices require a commitment for some period
19 beyond one year. Each of the nuclear fuel processes can be purchased individually
20 or bundled at any point in the fuel cycle, with the exception of fabrication.
21 Fabrication is a complex process that has specific requirements for each individual
22 reactor and therefore is typically sourced to a single supplier with long term

1 agreements. Over the past 5 years the market has seen some volatility, mostly
2 related to the U₃O₈ pricing component. Over the past year, the conversion market
3 has experienced an increase in prices, primarily due to a labor union dispute
4 between the only United States converter and its workforce. The enrichment
5 segment of the process has remained fairly steady over the past year for both short
6 term and long term pricing.

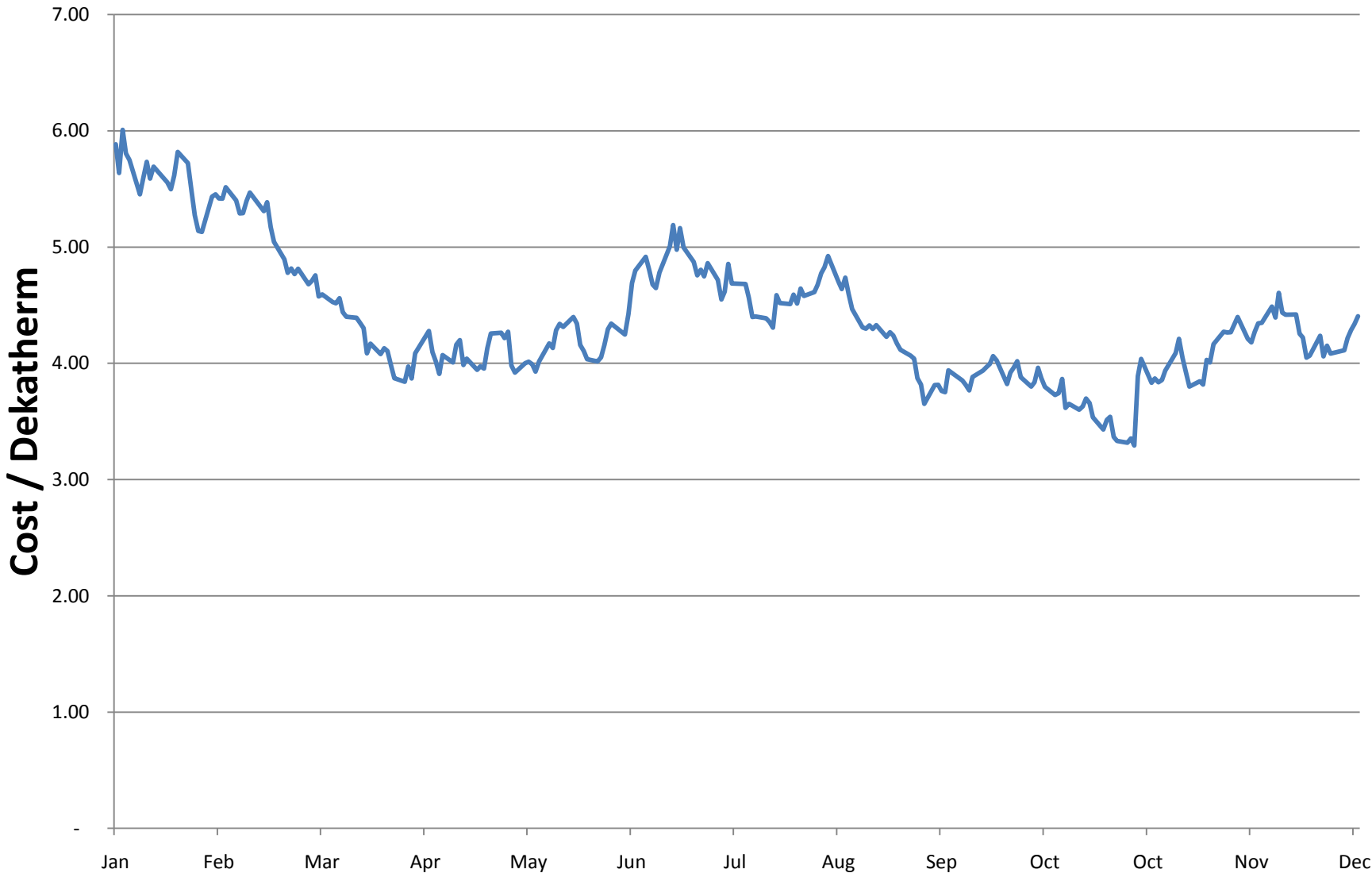
7
8 **Q. WHAT REQUEST DOES SCE&G MAKE OF THE COMMISSION IN**
9 **THIS PROCEEDING?**

10 A. During the Review Period, the Natural Gas and Uranium Procurement
11 Department made diligent and prudent efforts to obtain reasonable market-based
12 prices for the reliable supply of nuclear fuel and natural gas for electric generation
13 and to procure the necessary capacity for the delivery of that supply. Therefore,
14 on behalf of SCE&G, I respectfully request that the Commission find that the
15 Company's fuel purchasing practices were reasonable and prudent for the Review
16 Period.

17
18 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

19 A. Yes.

Daily Settle Prices



The Nuclear Fuel Cycle

